

**ABSTRACT**

Method and apparatus for sharing one or more high-level language data structures between an assembly language program and a high-level language program. Data structures that include one or more elements are defined in both an assembly language source code file and in high-level language source code file, with the definitions in the assembly language source code file being in the high-level language. The storage requirements of the data structures are determined from the definitions set forth in the assembly source file and the definitions are removed from the assembly source file prior to processing by an assembler. Memory allocation directives that are included in the assembly source file specify memory addresses of the data structures and are removed from the assembly source program prior to processing by the assembler. The assembly source file includes references to elements of the data structures in the form of substitution directives. Using the memory allocation directives and the data structure definitions, the substitution directives are replaced with memory addresses or element sizes prior to processing by the assembler.